

Recovery Plan Action Status**Plan Name: Apalachicola Plants (4 spp.)****Plan Status: Final****Plan Date: 22-Jun-94****Lead Agency: USFWS****Lead Office: Panama City Ecological Services Field Office
(850)
769-0552)**

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
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Godfrey's butterwort (Pinguicula ionantha), Florida skullcap (Scutellaria floridana), White birds-in-a-nest (Macbridea alba), Telephus spurge (Euphorbia telephioides)	2	1.1	Management/monitoring in Apalachicola National Forest (AN)	Ongoing Current	FY 1995 - FY 1999		U.S. Forest Service	Management: General	Internal Field Assistance	Monitoring cost only. Management cost has not yet been determined. Management is an ongoing action conducted by the Forest Service. The ANF has a yearly 120,000+ acre prescribed burning program. According to L. Kirm (2009, pers. comm.), two to three compartments, i.e., management units, burned every year during the growing and dormant seasons. The ANF has an on-going timber-related management/monitoring study in the Hunt Timber Sale: pre- and post-harvest survey data have been collected in two sites (L. Kirm, 2009, pers. comm.). In addition, several years of monitoring data (e.g., documenting presence/absence in each population, and qualitative visual estimate of the density of white-birds-in-a-nest) have been collected in three permanent plots. However, these data were not available for evaluation. Macbridea alba is found scattered under the Apalachicola National Forest Utility ROW of SR 65. Protective measures have been established with Talquin

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										Electric during annual maintenance and the upcoming pole replacement.

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Godfrey's butterwort (Pinguicula ionantha), Florida skullcap (Scutellaria floridana)	3	1.22	Population biology- S. floridana and P. ionantha genetic studies	Not Started	FY 2012	FY 2013	Botanical Gardens, U.S. Fish and Wildlife Service, Universities	Management: Planning, Research: Genetics	Contract, Species Expert	<p>Population genetic studies - The aims of the population genetic studies will be to determine: 1) genetic diversity within and among populations and 2) population genetic similarity. The results of these studies will inform seed collection and reintroduction efforts. The identification of populations with rare alleles or with high levels of genetic diversity will be a focus of these studies, as this will be important for the preservation of these species.</p> <p>Investigators: Dr. Brenda Molano-Flores (rare plant conservation) Illinois Natural History Survey, 1816 South Oak Street, Champaign, IL 61820. molano@inhs.uiuc.edu Dr. Janice Coons (seed ecology) Eastern Illinois University, Biological Sciences Department, Life Sciences Bldg. 2070, 600 Lincoln Ave., Charleston, IL 61920. jcoons@eiu.edu Dr. Jason Koontz (population genetics) Augustana College, Biology Department, Science Building 315, 639 38th Street, Rock Island, IL 61201. JasonKoontz@augustana.edu</p>

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Godfrey's butterwort (Pinguicula ionantha)	2	1.23	Pinguicula ionantha population biology in ANF	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, U.S. Forest Service, Universities, Florida Department of Agriculture and Consumer Services, including Forestry Division	Research: Demographic Studies, Research: Genetics, Research: Other Information, Research: Population Surveys	Contract, Graduate Student, Species Expert	<p>Kesler et al. (2008) studied the effects of prescribed fire on demography of 12 populations of P. ionantha over a period of two years in ANF and Tate's Hell State Forest (THSF), and used these data to project the effect of fire frequency and season on population growth. The study showed that P. ionantha responds strongly and positively to prescribed fire. Their model indicates that the timing of the fire event had an influence on fecundity contributions of P. ionantha. Based on this study, the fire return interval could be reduced to about 2 yr. The author's observations in the field led them to conclude that the rarity of this species is a result of the rarity of its herb bog habitat, i.e. 85 to 98 % of this habitat has been estimated to be lost.</p> <p>Pitts-Singer, HAnula, & Walker (2002) study on pollinators indicated Halictidae were the visitors of the flowers.</p> <p>Herbert Kesler and Jennifer Trusty established in 2010 plots along roadside and natural forest populations in order</p>

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										<p>to determine the effects of fire management and road modifications on <i>Pinguicula ionantha</i>. The 2010 census found that <i>P. ionantha</i> populations appeared viable with large numbers of plants. Furthermore, when GIS polygons of population boundaries from 2004 and 2010 were compared, there were several instances in which populations had expanded in area. Wet conditions would allow the very small seeds to float out from the source population near the cypress into flooded herb bog habitat, expanding the population area and size. Despite the loss of more than 90% of previously known plants, these populations had time and weather favorable to recuperate prior to the 2010 census.</p> <p>Dr. Brenda Molano-Flores (Illinois Natural History Survey, Champaign, IL) and collaborators will be investigating seed germination and population genetics; is a two year project 2011-2012.</p>

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Godfrey's butterwort (Pinguicula ionantha)	2	1.31	Pinguicula survey in ANF	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, U.S. Forest Service, Universities, Florida Department of Agriculture and Consumer Services, including Forestry Division	Research: Population Surveys	Graduate Student	Surveys planned from 2004-2006 of known sites through research project by S. Hermann and Herbert Kesler, Auburn University funded through DOACS, Sec. 6 \$.
Godfrey's butterwort (Pinguicula ionantha)	3	1.32	Pinguicula ionantha surveys outside ANF	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, U.S. Forest Service, Private landowners, Universities, Florida Department of Agriculture and Consumer Services, including Forestry Division, Contractor, Landowners and Managers	Research: Population Surveys	Labor type not yet selected	Partial surveys off of ANF include on Tate's Hell and St Joe Buffer Preserve which include work by S. Hermann and Herbert Kesler, Auburn University. FWS require surveys in suitable habitats when wetland permits are submitted to COE for development projects. Ongoing as long as land is available. This recovery action is ongoing and conducted primarily by the Forest Service, FWS botanist, FNAL, and H. Kesler (Folius Consulting, AL). One new population was found at Tate's Hell and at Tydall AFB this year 2011.
Godfrey's butterwort (Pinguicula ionantha), Florida skullcap (Scutellaria floridana), White birds-in-a-nest (Macbridea alba), Telephus spurge (Euphorbia telephioides)	3	2.1	Develop a regional report on right-of-way management in coastal savannah regions	Not Started			U.S. Forest Service, The Nature Conservancy, Florida Department of Transportation, Contractor	Management: Habitat Maintenance and Manipulation	Contract	

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Godfrey's butterwort (Pinguicula ionantha), Florida skullcap (Scutellaria floridana), White birds-in-a-nest (Macbridea alba), Telephus spurge (Euphorbia telephioides)	3	2.2	Experiment with right-of-way management	Not Started			U.S. Fish and Wildlife Service, U.S. Forest Service, Florida Department of Transportation, Utilities, Florida County Road Department	Management: Habitat Maintenance and Manipulation	Internal Field Assistance	

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Godfrey's butterwort (Pinguicula ionantha), Florida skullcap (Scutellaria floridana), White birds-in-a-nest (Macbridea alba), Telephus spurge (Euphorbia telephioides)	2	3.1	Secure protection for the 4 plants outside AN	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Private landowners, Landowners and Managers	Acquisition	Internal Technical Assistance	<p>Protections off of ANF for telephus spurge include: RGP and North Glades on PCB (St Joe easements) and Shallow Reed Site conservation easement in Gulf County. Other lands that at least one of these 4 include Tates Hell SF, Lathrop Island (BLM and St Joe private), Brenda Ward private landowners has a few skullcaps, St Joe Buffer Preserve has skullcap, spurge, butterwort. Actual costs of acquiring land by purchase or protecting it through conservation easements is NOT included here.</p> <p>This is an ongoing action. To date, about nine protected P. ionantha populations have been secured: one population on the St. Joseph Buffer Preserve (SJB), Gulf County; one population at Lathrop Bayou, Bay County; one population (but potentially extirpated) at Box-R Wildlife Management Area (Box-R WMA), Franklin County; and seven populations at Tate's Hell State Forest, Franklin County.</p> <p>10 protected populations of M. alba have been</p>

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										<p>secured: two populations on the St. Joseph Buffer Preserve (SJBP), Gulf County; one population at Lathrop Bayou, Bay County; one population at Box-R Wildlife Management Area (Box-R WMA), Franklin County; and six populations at Tate?s Hell State Forest, Franklin County. For S. floridana, 7 protected populations have been secured: three populations on the St. Joseph Bay State Buffer Preserve (SJBSBP), Gulf County; one population at Lathrop Bayou, Bay County; and three populations at Tate?s Hell State Forest (THSF), Franklin County. These are public lands and therefore, protected under the Endangered Species Act.</p> <p>To date, six protected populations have been secured for telephus spurge: four populations on the St. Joseph Buffer Preserve (Gulf County), and the North Glades and the Breakfast Point Mitigation Bank (BPMB) populations (Bay County).</p>

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Godfrey's butterwort (Pinguicula ionantha), Florida skullcap (Scutellaria floridana), White birds-in-a-nest (Macbridea alba)	2	3.2	Develop management plans for protected sites outside AN	Ongoing Current	FY 2005		U.S. Fish and Wildlife Service, Private landowners, Florida Department of Agriculture and Consumer Services, including Forestry Division, Contractor, Landowners and Managers	Management: Planning	Contract	Some of the public and private lands contain mgt plans per either their requirements as public lands or within easements, or result of consultation requirement. Management plans for P. ionantha have been developed and implemented by the: Florida Fish and Wildlife Conservation Commission (FWCC) for the Box-R Wildlife Management Area (Box-R WMA) (FWCC 2006); Bureau of Land Management (BLM) & the St. Joe Timberland Company (Timberland Company) for the Lathrop Bayou (BLM 2008). For M. alba, management plans have been developed and implemented by the: Florida Fish and Wildlife Conservation Commission (FWCC) for the Box-R Wildlife Management Area (Box-R WMA) (FWCC 2006); Bureau of Land Management (BLM) and the St. Joe Timberland Company (Timberland Company) for the Lathrop Bayou (BLM 2003). For S. floridana, management plans have been developed and implemented by

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										the: 1) Bureau of Land Management (BLM) and the St. Joe Timberland Company (Timberland Company) for the Lathrop Bayou (BLM 2003), and 2) Florida Department of Environmental Protection for the SJBSBP. Recently, the Plant Conservation Program of the Florida Division of Forestry provided management recommendations, i.e., application of prescribed fire, to assist THSF land managers in prioritizing stands that contain federally threatened plant species
Godfrey's butterwort (Pinguicula ionantha), Florida skullcap (Scutellaria floridana), White birds-in-a-nest (Macbridea alba), Telephus spurge (Euphorbia telephioides)	2	3.3	Implement management and monitoring for protected sites outside ANF	Ongoing Current	Prior to FY 1995		Private landowners, Universities, Florida Department of Environmental Protection, Florida Department of Agriculture and Consumer Services, including Forestry Division, Landowners and Managers	Management: General	Labor type not yet selected	Regular mgt occurs on Tates Hell, St Joe Buffer Preserve, St Joe lands in RGP, Brenda Wards property. No formal monitoring plans are in place that we are aware.

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Godfrey's butterwort (Pinguicula ionantha), Florida skullcap (Scutellaria floridana), White birds-in-a-nest (Macbridea alba), Telephus spurge (Euphorbia telephioides)	3	5	Garden propagation and reintroduction	Ongoing Current	FY 2006	FY 2008	Botanical Gardens, U.S. Fish and Wildlife Service, Center for Plant Conservation	Research: Propagation	Labor type not yet selected	<p>Ping is sold on open market. Contract with Historic Bok Tower initiated FY 06 for ex situ research and protection on spurge, skullcap, and butterwort. Birds in a nest already held in ex situ by HBok Sanctuary. Tested transplant occur with minimization measures on St Joe lands into conservation easement area with minimal success to date (drought in spring fy 2006 may be reason not more successful).</p> <p>Although conserving M. alba in-situ is the best option, an ex-situ collection of established seedlings and adults is recommended.</p> <p>Dr. Brenda Molano-Flores (Illinois Natural History Survey, Champaign, IL) and collaborators will be investigating seed germination requirements.</p>

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Godfrey's butterwort (Pinguicula ionantha)	2	6	Protect Pinguicula ionantha from depredations due to collecting	Partially Complete	FY 2006		U.S. Fish and Wildlife Service, Private landowners, Landowners and Managers	Other: Law Enforcement	Internal Technical Assistance	Comments on permits requested by carnivorous plant society requested restriction of selling/placing plants within 10 miles of known location of ping. Recommendations made to RO, not sure put into provisions of permit to CP society. Permit package states that plants are being distributed are not from the wild [originals must have at one time come from wild, but have no paper trail]. In order to implement conservation measures and regulations, the Service granted a permit (TE061005-1) to the International Carnivorous Plant Society (ICPS) in 2003, which allows the society to sell seeds of endangered and threatened carnivorous plants only within the USA. Some restrictions apply to this permit (see http://www.carnivorousplants.org/statements/seedcollect.html); in addition, an annual report is required stipulating their selling activities.